

**NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Vehicle Recorder Division
Washington, DC 20594**



GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

DCA10IA022

**By
Christopher Babcock**

Warning

The reader of this report is cautioned that the transcription of a cockpit voice recorder audio recording is not a precise science but is the best product possible from a Safety Board group investigative effort. The transcript or parts thereof, if taken out of context, could be misleading. The transcript should be viewed as an accident investigation tool to be used in conjunction with other evidence gathered during the investigation. Conclusions or interpretations should not be made using the transcript as the sole source of information.

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, DC 20594

March 5, 2010

Cockpit Voice Recorder - 12

Group Chairman's Factual Report By Christopher Babcock

A. EVENT

Location: Charleston, West Virginia
Date: January 19, 2010, 1613 Eastern Standard Time (EST)¹
Aircraft: CL-600-2B19, N246PS
Operator: PSA Airlines, Flight 2495
NTSB Number: DCA10IA022

B. GROUP

A group was convened on January 27, 2010.

Chairman: Christopher Babcock
Aerospace Engineer
National Transportation Safety Board

Member: Captain Matt Christner
Aircrew Program Designee/Check Airman
PSA Airlines

Member: Bob Drake
Air Safety Investigator
Federal Aviation Administration

Member: Captain Brandon Tierney
Air Safety Investigator
Air Line Pilots Association

C. SUMMARY

On January 19, 2010, PSA Airlines (d.b.a. US Airways Express) flight 2495, a Bombardier CL600-2B19, registration N246PS, rejected the takeoff and ran off the end of the runway at Yeager Airport, Charleston, West Virginia. The airplane stopped in the Engineered Materials Arresting System (EMAS) installed in the safety area. There were no injuries to the 31 passengers or 3 crew members onboard and the airplane received minor damage. The flight was operating under the provisions of 14 CFR Part 121 and its

¹ All times are expressed in Eastern Standard Time, unless otherwise noted.

intended destination was Charlotte/Douglas International Airport, Charlotte, North Carolina.

A solid-state cockpit voice recorder (CVR) was sent to the National Transportation Safety Board's Audio Laboratory for readout. The CVR group meeting convened on January 27, 2010, and a full transcript was prepared for the final 42 minutes of the 2-hour, 4-minute digital recording (see attached).

D. DETAILS OF INVESTIGATION

On January 20, 2010, the NTSB Vehicle Recorder Division's Audio Laboratory received the following CVR:

Recorder Manufacturer/Model: **L-3 Communications FA2100-1020**
Recorder Serial Number: **255402**

Recorder Description

Per federal regulation, CVRs record a minimum of the last 30 minutes of aircraft operation; this is accomplished by recording over the oldest audio data. When the CVR is deactivated or removed from the airplane, it retains only the most recent 30 minutes or 2 hours of CVR operation, depending on the CVR model. This model CVR, the L-3 Communications FA2100-1020, is a solid-state CVR that records 2 hours of digital cockpit audio. Specifically, it contains a 2-channel recording of the last 2 hours of operation and separately contains a 4-channel recording of the last 30 minutes of operation. The 2-hour portion of the recording is comprised of one channel of audio information from the cockpit area microphone (CAM) and one channel that combines two audio sources: the captain's audio panel information and the first officer's audio panel information. The 30-minute portion of the recording contains 4 channels of audio data; one channel for each flight crew and one channel for the CAM audio information, and a fourth channel containing third crewmember/flight observer audio.

Recorder Damage

Upon arrival at the audio laboratory, it was evident that the CVR had not sustained any heat or structural damage and the audio information was extracted from the recorder normally, without difficulty.

Audio Recording Description

For the 2-hour portion of the CVR recording, the CAM channel recording contained good quality² audio information, and the mixed flight crew channel contained excellent quality audio information. As shown in the table below, the 30-minute portion of the recording consisted of three channels of useable audio information. Each channel's audio quality is indicated in the table. Notably, channel number one did not contain any audio information (nor was it required by federal regulations).

² See attached CVR Quality Rating Scale.

Table 1. 30-minute portion audio contents and quality.

Channel	Content/Source	Quality
1	N/A	N/A
2	Captain/PA	Excellent
3	First officer	Excellent
4	CAM	Good

Timing and Correlation

Timing on the transcript was established by correlating the CVR Elapsed Time (ET) in seconds of the last three radio transmissions from the aircraft with audible microphone keying with the Subframe Reference Number (SRN)³ of corresponding events on the FDR. Each of the three radio transmissions acted as an anchor point for a linear interpolation between the remaining CVR events. A linear function of the form

$$FDR = m * CVR + b, \quad (1)$$

was fit to the data where m is the slope of the interpolation and b is the offset. Using the values in Table 2 the correlation between CVR ET and FDR SRN:

Table 2. Begin and end times of events used to correlate CVR and FDR.

FDR Start	FDR Stop	CVR Start	CVR Stop
420962.21	420968.21	6027.0	6034.2
421175.21	421185.21	6241.3	6250.4
421188.21	421190.21	6254.4	6255.7

$$FDR_SRN = 1.0 * CVR_ET + 414934.10 \quad (2)$$

In order to arrive at local EST, the UTC parameter on the FDR was used to offset the CVR ET to local EST:

$$UTC = FDR_SRN - 344600 \quad (3)$$

Combining equations 2 and 3:

$$UTC = CVR + 70334.10 \quad (4)$$

Timing can then be easily corrected to local EST by subtracting five hours.

Description of Audio Events

The recording began at 1432:14 EST and the transcript began at 1554:07. The transcript covers the engine start, taxi, and incident events. The recording and transcript end at 1636:40 EST.

Christopher Babcock
Aerospace Engineer
Vehicle Recorder Division

³ See Flight Data Recorder Specialist's Factual Report for more information

CVR Quality Rating Scale

The levels of recording quality are characterized by the following traits of the cockpit voice recorder information:

Excellent Quality	Virtually all of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate only one or two words that were not intelligible. Any loss in the transcript is usually attributed to simultaneous cockpit/radio transmissions that obscure each other.
Good Quality	Most of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate several words or phrases that were not intelligible. Any loss in the transcript can be attributed to minor technical deficiencies or momentary dropouts in the recording system or to a large number of simultaneous cockpit/radio transmissions that obscure each other.
Fair Quality	The majority of the crew conversations were intelligible. The transcript that was developed may indicate passages where conversations were unintelligible or fragmented. This type of recording is usually caused by cockpit noise that obscures portions of the voice signals or by a minor electrical or mechanical failure of the CVR system that distorts or obscures the audio information.
Poor Quality	Extraordinary means had to be used to make some of the crew conversations intelligible. The transcript that was developed may indicate fragmented phrases and conversations and may indicate extensive passages where conversations were missing or unintelligible. This type of recording is usually caused by a combination of a high cockpit noise level with a low voice signal (poor signal-to-noise ratio) or by a mechanical or electrical failure of the CVR system that severely distorts or obscures the audio information.
Unusable	Crew conversations may be discerned, but neither ordinary nor extraordinary means made it possible to develop a meaningful transcript of the conversations. This type of recording is usually caused by an almost total mechanical or electrical failure of the CVR system.

Transcript of a L-3 Communications FA2100-1020 solid-state cockpit voice recorder, serial number 255402, installed on an PSA Airlines Bombardier CL-600-2B19 (N246PS), that rejected a takeoff into the Engineered Materials Arresting System at Yeager Airport in Charleston, West Virginia.

LEGEND

CAM	Cockpit area microphone voice or sound source
HOT	Flight crew audio panel voice or sound source
RDO	Radio transmissions from N246PS
INT	Aircraft intercom sound source
GND	Radio transmission from the Yeager Airport ground controller
TWR	Radio transmission from the Yeager Airport tower controller
-1	Voice identified as the captain
-2	Voice identified as the first officer
-3	Voice identified as the flight attendant
-4	Voice of unidentified ARFF crew
-5	Voice of unidentified ARFF crew
-?	Voice unidentified
*	Unintelligible word
#	Expletive
@	Non-pertinent word
()	Questionable insertion
[]	Editorial insertion

Note 1: Times are expressed in EST.

Note 2: Generally, only radio transmissions to and from the accident aircraft were transcribed.

Note 3: Words shown with excess vowels, letters, or drawn out syllables are a phonetic representation of the words as spoken.

Note 4: A non-pertinent word, where noted, refers to a word not directly related to the operation, control or condition of the aircraft.

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

14:32:14

START OF RECORDING

15:54:07

START OF TRANSCRIPT

15:54:09

CAM-2 fuel pump?

15:54:12

CAM-1 right one's on.

15:54:13

CAM-2 hydraulic pump?

15:54:13

CAM-1 auto on.

15:54:14

CAM-2 doors?

15:54:14

CAM-1 closed and *.

15:54:20

CAM-? **

15:54:22

CAM-1 locked.

15:54:22

CAM-2 beacon?

15:54:23

CAM-1 on.

15:54:23

CAM-2 packs?

15:54:23

CAM-1 off.**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

15:54:24
CAM-2 ignition?

15:54:24
CAM-1 armed.

15:54:25
CAM-2 complete.

15:54:43
CAM [sound of engine start]

15:55:06
CAM [sound of chime]

15:55:06
CAM-2 **.

15:55:07
CAM-1 set.

15:55:07
CAM-2 * electric?

15:55:08
CAM-1 on. checked.

15:55:08
CAM-2 A-P-U?

15:55:09
CAM-1 on.

15:55:09
CAM-2 ignition?

15:55:09
CAM-1 off.

15:55:10
CAM-2 A-P-R?

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

15:55:10

CAM-1 tested armed.

15:55:11

CAM-2 bleeds packs. set and on. anti ice. ** transponder on. down to the line.

15:55:14

CAM-1 * the line.

15:55:15

CAM-2 rudder?

15:55:15

CAM-1 checked.

15:55:16

CAM-2 nosewheel steering?

15:55:17

CAM-1 armed.

15:55:17

CAM-2 * complete.

15:56:03

CAM-1 yeah I don't know why I'm hungry a little.

15:56:20

CAM-1 @ told me she packed me a...peanut butter and jelly sandwich. uh no she didn't ** we were out of bread. #.

15:56:40

CAM-1 they have refrigerators?

15:57:22

CAM-1 I got *.

15:57:40

CAM-2 got clearance. who's tired? * me.**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION

**TIME and
SOURCE**

CONTENT

15:57:46

CAM-2 he didn't have to work. He just got a job with a Cessna pilot mentor...this guy's a private pilot—a private pilot with an instrument ticket with uh three hundred hours. just bought a Cessna Mustang. my buddy has to go fly with him a thousand hours for the insurance company to fly with him.

15:58:12

CAM-1 oh my gosh.

15:58:14

CAM-2 so he's on salary with this guy. [sound of laughter]

15:58:18

HOT [sound of double chime]

15:58:22

INT-2 yes ma'am?

15:58:23

INT-3 we are secure.

15:58:25

INT-2 alrighty thank you.

15:58:26

INT-3 thank you.

15:58:51

PA-1 ladies and gentlemen from the flight deck. just a quick update as we were making our turnout uh ground control just told us there is a little bit of flow control going into Charlotte. only about a fifteen minute delay. uh should still get you into Charlotte uh probably about ten—five to ten minutes early. they're landing to the south today so that cuts off a little bit of time for us. like I said as for now we should be taking off in fifteen more minutes.

15:59:20

CAM-2 we got to come up with fourteen minutes.

15:59:24

CAM-1 even after the sixteen minutes.

AIR-GROUND COMMUNICATION

CONTENT

INTRA-AIRCRAFT COMMUNICATION

**TIME and
SOURCE**

CONTENT

15:59:29

CAM-2 what's that?

15:59:38

CAM-2 got to find out if we're gonna swap real quick too.

16:02:00

CAM-1 sorry fella.

16:02:10

CAM-2 **.

16:02:23

CAM-1 you want to tell him we can—we're ready to taxi whenever or we can sit here. so we dont block him.

16:02:59

CAM-1 don't they park like right there?

16:03:02

CAM-2 *.

16:03:33

CAM-1 ohhh boy.

16:03:40

CAM-1 I got pretty # up on uh Saturday.

16:03:46

CAM-2 did you?

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:02:35

RDO-2 and ground Blue Streak four ninety five. we're ready to taxi. You want us to sit here and wait it out or just sit somewhere else?

16:02:41

GND Blue Streak four ninety five you can hold her on the ramp.

16:02:44

RDO-2 okay we'll hold here on the ramp.

INTRA-AIRCRAFT COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:03:48

CAM-1 what's that?

16:03:49

CAM-2 it's uh the 'vette. hold on.

16:03:53

CAM-2 she hasn't been able to take it out since she went on a cruise. * the other day.

16:04:11

CAM-2 ** on here. sounds good. **.

16:04:14

CAM-1 what is it? what kind?

16:04:15

CAM-2 it's an oh four fiftieth anniversary 'vette. convertible.

16:04:18

CAM-1 oh *.

16:04:22

CAM-1 that @ he has one. grey convertible. I don't know what year though.

16:04:31

CAM-2 I probably can do about one ten. ** six point two liter. * six hundred thirty eight horsepower engine and decked it out. Yeah.

16:04:50

CAM-1 seventy five...lot more.

16:04:54

CAM-2 oh yeah [sound of laughter]

16:04:55

CAM-1 wow.

16:04:55

CAM-2 hundred and thirty two.

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:04:57
CAM-1 #.

16:04:57
CAM-2 yeah **.

16:05:00
CAM-1 oh my gosh.

16:05:01
CAM-2 I could buy hers...and hers is in showroom condition. I mean it's mint. there's nothing wrong with it. mileage is good. I mean 'cause it doesn't get—it don't get driven in the fog. it don't get driven in the rain. It's a fair-weather car.

16:05:15
CAM-1 yeah yeah.

16:05:18
CAM-2 doesn't have much mileage on it either...if she was selling it blue book on it I could pick it up for * thirty...if she loses her job in march or may I * be buying it. by then I'll be in a position where I could take—take over the payments. that's all she wants. so that means I could get it for twenty one.

16:05:39
CAM-1 wow.

16:05:40
CAM-2 but I'd let her buy it back if she ever got a job.

16:05:45
CAM-1 um this girl I dated in high school—I went to the prom with her. her dad drove us in their own Rolls Royce.

16:05:54
CAM-2 really?

16:05:54
CAM-1 he was our chauffer in their Rolls Royce.

16:05:56
CAM-2 that's cool.

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:05:57

CAM-1 he uh he had like some business he sold for millions of dollars you know so he was like in his forties or something and retired. so they had their house—they had an indoor swimming pool. and they had their big barn. and in the barn it was filled with Corvettes and Jaguars um like the Rolls was in there. each kid on their sixteenth birthday got a nineteen sixty something red convertible Corvette. * and uh two boys two girls. um @ was her name. she would drive a different Corvette to school every day—or a Jaguar or whatever just every day she'd drive a different car **.

16:06:38

CAM-2 I can see having one toy. our dream house has a ten car garage. I mean it'd be her 'vette in one bay. I want a uh twenty twelve is when the new convertible Cameros are supposed to come out. Supersport. uh silver with a black racing stripe and a black ragtop. and then uh gotta have some kind of truck.

16:07:07

CAM-1 yeah.

16:07:08

CAM-2 and then uh you know the boat and stuff. It's separate—the two car garage is attached to the house. yeah yeah we have a lot of fun. We used to go out **.

16:07:13

CAM-1 yeah oh my God.

16:07:19

CAM-1 well act—yeah yeah I'd like to have a three car garage. and then I would like to have a uh two car barn garage but where to like you could pull two cars in—three cars in.

16:07:40

CAM-1 you know what I mean. It'd be two cars deep.

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:07:32

GND Blue Streak four ninety five taxi to runway two three via bravo and alpha.

16:07:37

RDO-2 two three via bravo and alpha Blue Streak four ninety five.

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

**TIME and
SOURCE**

CONTENT

16:07:42
CAM-2 yeah.

16:07:43
CAM-1 so I guess really that'd be three and four that's seven.

16:07:48
HOT-2 well we were just talking about where you could you know...get 'em in side by side.

16:07:53
HOT-1 yeah.

16:07:55
HOT-2 yeah when you're ready.

16:07:56
HOT-1 yeah.

16:08:01
HOT-2 but we're gonna have one bay that was like...a quasi maintenance bay where you could go * there's a pit to go underneath it to change the oil and stuff.

16:08:10
HOT-1 oh my God.

16:08:11
HOT-2 with a pressure washer in the pit so you could pressure wash the bottom of the car if there's any salt grime or anything like that.

16:08:15
CAM [sound of engine start]

16:08:17
HOT-1 oh my gosh. [sound of laughter]

16:08:17
HOT-2 oh yeah we dream up some big #. if you're gonna dream, dream big. I still haven't gotten a gate reply on this. that's pissing me off.

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:08:38

HOT-1 clear left.

16:08:39

HOT-2 clear right. generators electrics on. checked. A-P-U's on. ignition's off. bleeds packs set and on. anti ice checked not required. delayed items complete.

16:08:44

HOT-1 flaps twenty. taxis.

16:08:45

CAM [sound similar to flap handle movement]

16:08:57

HOT-2 we're up.

16:09:02

HOT-2 takeoff data forty four thousand pounds. flaps eight twenty seven twenty eight thirty four seventy three eighty seven point eight set.

16:09:08

HOT-1 set.

16:09:08

HOT-2 flaps trims eight degrees green. seven point six.

16:09:12

HOT-1 eight green seven point six.

16:09:13

HOT-2 flight controls checked. nav aids autotuned. thrust reversers armed. taxi checklist complete.**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

16:08:45

GND Blue Streak four ninety five change my frequency one two five point seven. Charleston altimeter two niner niner one. wind calm.

16:08:51

RDO-2 twenty nine— excuse me twenty five seven and uh we got lima.

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

**TIME and
SOURCE**

CONTENT

16:09:19
HOT-1 yeah cause— see I would like to have you know like a three car attached to my house.

16:09:23
HOT-2 uh-huh.

16:09:23
HOT-1 just so that you know @ parks I park and then I get my car that you know that I don't really touch ever. you know what I mean like the nice whatever kind of car.

16:09:32
HOT-2 yeah...yeah.

16:09:35
HOT-1 and then I'd like to have a barn...cause then like above like the top floor you could have kind of like a guest area you know a guest bedroom—.

16:09:45
HOT-2 guest— guest— guesthouse.

16:09:47
HOT-1 yeah a guesthouse. yeah there you go. thanks...um I can go all the way down right? I guess so.

16:09:52
HOT-2 um-hum.

16:09:54
HOT-1 um and then yeah like I said on the bottom is where you know you could pull like the boat jet skis you could have a little workshop.

16:10:02
HOT-2 Forerunners yup.

16:10:03
HOT-1 exactly. all— lawn mowers all your #.

16:10:05
HOT-2 yeah.

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:10:09

HOT-2 but I guess until she wins the lottery or I win the lottery or whatever it won't happen. but it's fun to sit down and talk about stuff like that.

16:10:17

HOT-1 oh yeah.

16:10:20

HOT-1 well I mean if you could get the house that has the three car gar— set that's my thing. I— I— I'd like to get the house with the three car garage and the basement is like the two things that I really want this time. a basement even if it's unfinished cause I'd actually enjoy finishing it.

16:10:34

HOT-2 finishing it yourself yeah.

16:10:35

HOT-1 if I could get a basement a three car garage you know a nice living area whatever. then that's fine. as long you know obviously too it's got to have some— a little bit of property I guess.

16:10:46

HOT-2 right.

16:10:46

HOT-1 cause cause then I would eventually I'd like to save up do whatever you know and build that uh like the barn kind of thing to match— to match the house.

16:10:56

HOT-2 oh we talked about you know we want fifteen acres.

16:11:02

HOT-1 #.

16:11:03

HOT-2 the house'll sit kind of in one of the front corners but back up off the road where it can't be seen.

16:11:09

HOT-1 yeah...that's— yeah.

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:11:10

HOT-2 and we— she wants a road track built on the property.

16:11:14

HOT-1 aww man that'd be cool as #.

16:11:14

HOT-2 plus she— and then have a uh...she wants a coupe cause she can't take her— there's a road course at the Corvette museum in Bowling Green, Kentucky, but you can't take the ragtops out there.

16:11:22

HOT-1 yeah...ohhh.

16:11:26

HOT-2 it's got to be a coupe. which I mean if the ragtop's got a rollbar— a roll cage in it I don't see what it matters.

16:11:33

HOT-1 yeah yeah.

16:11:34

HOT-2 and she said well— I'd put one in and take it out there.

16:11:45

HOT-2 just need to get hers paid off.

16:11:47

HOT-1 before takeoff checklist.

16:11:52

PA-2 and ladies and gentlemen once again welcome on board flight twenty four ninety five service to Charlotte. this time we're number one for departure should only be about another oh two or three minutes. I'd like to ask Gayle to please have a seat.

16:12:01

HOT-2 takeoff config checks. takeoff fuel quantity balance four seven six oh.

16:12:04

HOT-1 four seven six oh.

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:12:18
HOT-2 brake temperture check. fuel cross flow is manual off. windshield heat low. flight attendants been advised. transponder T-CAS on and auto. takeoff briefing. no questions.

16:12:23
HOT-1 mine two three.

16:12:24
HOT-2 ignition anti ice not required. CAS verify checked.

16:12:27
HOT-1 checked.

16:12:27
HOT-2 before takeoff check's complete. final is clear...I did turn this off...yes.

16:12:51
CAM [sound of engine RPM increase]

16:12:53
HOT-1 we're cleared to go right?

16:12:54
HOT-2 yup.

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

16:12:05
TWR Blue Streak four ninety five turn left direct Holston Mountain runway two three cleared for takeoff. wind calm. traffic a Cessna on a five mile final for runway two three.

16:12:14
RDO-2 left turn direct Holston Mountain cleared for takeoff Blue Streak four ninety five.

16:12:41
RDO-1 hey just to let you know too uh you've got like a big flock of almost looks like crows down here to the right of uh two three.

16:12:54
TWR Blue Streak four ninety five roger are they uh off the runway?

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:13:06
HOT-1 set thrust.

16:13:06
HOT-2 thrust set.

16:13:10
HOT-2 eighty knots.

16:13:11
HOT-1 checked.

16:13:16
CAM [sound similar to flap handle movement]

16:13:20
HOT-1 #.

16:13:21
HOT-2 V one.

16:13:23
HOT [sound of master warning]

16:13:24
HOT-1 oh #.

16:13:25
HOT config flaps. [automated warning]

16:13:27
HOT [sound of master warning]

16:13:29
HOT config spoilers. [automated warning]

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

16:12:58
RDO-2 yes sir they're off the runway but they're uh flying around.

16:13:03
TWR Blue Streak four ninety five roger. thanks.

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:13:29
HOT-2 * it.

16:13:31
HOT-1 oh # me.

16:13:32
CAM [sound of engine RPM decrease]

16:13:38
CAM [sound of impact]

16:13:39
HOT [sound of single chime]

16:13:41
HOT-1 oh #.

16:13:46
HOT-1 why the # did I do that?

16:13:50
CAM [sound of three clapping noises]

16:13:53
HOT-1 [sound of loud exhale]

16:14:00
CAM [sound of three clapping noises]

16:14:16
HOT-1 oh #.

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

16:13:36
RDO-2 rejecting it off the end of the runway two three.

16:14:14
TWR airport eleven there's a C-R-J that's at the crashpad at the end of runway two three. that's a C-R-J two hundred.

16:14:22
TWR and airport eleven he will need assistance.

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:14:27

HOT-2 what do you want me to do Tom?

16:14:30

PA-3 ladies and gentlemen I know the captain will tell us a good story just as soon as—.

16:14:34

HOT-1 come on.

16:14:36

PA-3 * please.

16:14:39

PA-3 —fastened.

16:14:40

HOT-1 come on.

16:14:45

HOT-1 #.

16:14:54

PA-1 and folks from the flight deck uh as for now just please remain with your seatbelts fastened. uh we're talking to uh air— airport uh tower right now.

16:15:04

HOT-1 #.

16:15:50

HOT-1 #.

16:15:51

HOT-2 I'm sorry.

16:16:00

HOT-2 you want 'em shut down?

16:16:02

HOT-1 uh yeah. guess so.

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:16:10
HOT [sound of chime]

16:16:13
HOT [sound of chime]

16:16:20
CAM [sound of engine RPM decrease]

16:16:21
HOT [sound of chime]

16:16:50
HOT [sound of chime]

16:16:51
PA-1 and ladies and gentlemen from the flight deck once again. I do apologize. I'm sure you all got a bit of a fright there. uh however when we were uh going down the runway we hit a excess of speed but then we got some warnings up front here which we uh rejected the aircraft um obviously we ran out of a little bit of uh runway so we are stuck now in the uh overflight area here. they are sending some uh buses out. they will be deplaning the airplane here shortly. just again as for now please remain seated with your seatbelts fastened until we open the doors and let you all out. thank you.

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

16:16:11
TWR and uh Blue Streak how can we assist?

16:16:15
RDO-1 well we're all fine here and everything. we're just gonna need to act— obviously deplane. and uh if you could send some trucks out to uh get the people.

16:16:25
TWR we do have some folks coming out. uh can you shut your engines down?

16:16:28
RDO-1 affirmative. we're doing that now.

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:17:37
CAM-1 man did— did we even hit— we hit V one? I don't think we hit V one did we?

16:17:53
CAM-1 well we got config flaps config spoilers. we tried to reject. right?

16:18:02
CAM-2 right.

16:18:05
CAM-2 I tried to get on it with you too. you want me to go out there and wait?

16:18:09
CAM-1 I don't even know what the # we're supposed to do now.

16:18:12
CAM-2 I'll go out there and wait.

16:18:30
CAM-2 * out there yet?

16:18:54
CAM-1 just do an after landing again. make sure we got everything like—.

16:18:57
CAM-2 I— I did everything uh. I left the lights on transponder's off flaps are up probes are off ignition...is uh off anti ice is off A-P-U is on and uh bleeds are set for after. you want me to do shutdown?

16:19:13
CAM-1 # believable.

16:19:15
CAM-2 go through shutdown?

**TIME and
SOURCE**

CONTENT

16:18:40
RDO-1 and uh Blue Streak four ninety five we uh we do have it all shutdown and everything. just let us know when uh we can deplane and we'll open the door.

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:19:17

CAM-1 well yeah.

16:19:19

CAM-2 parking brake?

16:19:21

CAM-1 sh— should I set it? I guess yeah.

16:19:24

CAM-2 electric?

16:19:28

CAM-1 uh set.

16:19:29

CAM-2 fuel pumps off anti ice off windshield heat's off transponder's off. fuel check valve?

16:19:34

CAM-1 checked.

16:19:34

CAM-2 thrust levers?

16:19:35

CAM-1 shutoff.

16:19:36

CAM-2 passenger signs?

16:19:36

CAM-1 off.

16:19:37

CAM-2 hydraulic pump three A?

16:19:39

CAM-1 off.

16:19:40

CAM-2 beacon?**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

16:19:42
CAM-1 off.

16:19:43
CAM-2 nosewheel steering.

16:19:44
HOT [sound of chime]

16:19:45
CAM-2 C-V-R circuit breaker four D seven?

16:19:53
CAM-2 * how much longer.

16:19:55
CAM-1 uh he's gonna let us know I think when they're there.

16:20:01
CAM [sound of double chime]

16:20:03
INT-3 hello.

16:20:04
INT-1 hey obviously you heard— probably all heard all the # going off?

16:20:09
INT-3 uh actually no. not until you put the brakes on yeah.

16:20:13
INT-1 okay well—.

16:20:15
INT-3 what was it?

16:20:16
INT-1 we got all this config warning stuff and all that so we rejected and uh just pretty much ran out of runway.

16:20:25
INT-3 huh.

**TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT****TIME and
SOURCE****CONTENT**

16:20:25

INT-1 so now we're stuck in this uh thing here. they're sending— here they're—
you could go ahead and open the door.

16:20:31

INT-3 can I get up?

16:20:31

INT-1 yeah yeah you can get up.

16:20:32

INT-3 I can't even see where we are? I have no idea.

16:20:32

HOT [sound of chime]

16:20:33

INT-1 yeah you can get up. yeah.

16:20:35

INT-3 okay. alright.

16:20:37

HOT [sound of chime]

16:20:45

CAM [sound similar to main cabin door opening]

16:21:12

CAM-1 @...hey it's Tom @. I'm #...um well we're going down the runway here in
uh Charleston, West Virginia, and we got a config flap config uh spoiler
and I rejected and uh well long story short um past the runway I'm into
that over thing you know where the airplane sinks into the— into it. uh so
now I don't know what the hell I'm supposed to do cause I've never
obviously had anything like this you know...yeah I'm sitting in the airplane
right now...yeah pretty— yeah yeah...yeah who do I call on that? do I call
chief pilot?

16:22:15

CAM [unintelligible conversation in background]

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:22:20

CAM-4 everybody okay? need anything?

16:22:34

CAM-1 okay.

16:22:36

CAM-4 you okay boss?

16:22:37

CAM-1 yeah yeah.

16:22:38

CAM-4 alright.

16:22:41

CAM-1 oh #. I cannot # believe this.

16:22:50

CAM-4 * how many pax you got?

16:22:52

CAM-3 thirty.

16:22:53

CAM-4 thirty.

16:22:53

CAM-3 thirty.

16:22:54

CAM-4 three zero.

16:22:57

CAM-3 twenty nine and a— and a lap child.

16:23:08

CAM-4 whattya say? you say something?

16:23:10

CAM-3 and a baby.**AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:23:11
CAM-4 you got a baby? he okay?

16:23:15
CAM-4 is that thirty plus a baby?

16:23:18
CAM-3 uh yeah.

16:23:30
CAM-? in a minute.

16:23:43
CAM-3 um...prop up the door? prop this up so the door's not ruined.

16:23:45
CAM-1 yeah yeah sorry.

16:23:53
CAM-1 yeah I guess.

16:23:54
CAM-3 okay I guess I haven't really looked have I?

16:24:00
CAM-1 okay...okay...okay and I call that and talk to somebody there?

16:24:13
CAM [unintelligible conversation in background]

16:24:21
CAM-1 okay....okay...alright um so do I call them or call the company here er?
who— like— I call I mean I call @ or @. I mean obviously neither of them
are gonna answer their phone call er...okay...okay...okay...yeah...um **
out. the flaps were set— yeah.

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:25:42

CAM-1 well okay I'm gonna tell you exactly what happened. um well yeah we were— we were flaps eight okay? well uh # the data said flaps twenty...and it was at eight so as we're going down the runway I kind of noticed that so I put it to twenty and then we got config flaps probably I'm sure because they were movin'. so i just figured # okay I'll stop. you know I got config flaps config spoilers so like # you know so I tried to stop and it # went—yeah. so you know how— how am I gonna #— so cause obviously they're gonna come and look at all this # right? they're gonna be able to see it...yeah...no hold on a second. hey everybody's fine right in the back. hey is the gear—the gear hasn't collapsed or anything has it?

16:27:14

CAM-2 no but I want to check some smoky stuff coming out of it.

16:27:16

CAM-1 okay no...thirty and a lap...everybody's fine and the gear's still there.

16:27:30

CAM-1 uh no I think they're— well they're starting to get 'em off right now.

16:27:33

CAM [unintelligible conversation in background]

16:27:41

CAM-1 yeah um so when I call these numbers do I tell them exactly what I told you. pretty much I # up?

16:28:00

CAM-1 yeah...yeah. how # am I gonna be.

16:28:08

CAM-3 slowly down the steps. slowly down the steps. slowly down the steps okay.

16:28:36

CAM-3 um * your bags out. I'm not sure where you're going to meet up with your bags. they'll announce that on the bottom I'm sure...you leave a coat did you say? somebody left a coat?

16:28:38

CAM-1 yeah...yeah.

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:28:48
CAM-? **.

16:28:50
CAM-? they— they may have got it *.

16:28:57
HOT SELCAL SELCAL. [automated voice]

16:29:00
CAM-1 yeah...

16:29:01
CAM-? thank you @.

16:29:09
CAM-? [sound of laughter in background] I was going home.

16:29:12
CAM [sounds of passengers deplaning]

16:29:24
CAM-1 well yeah I mean...oh brother.

16:29:52
CAM-1 yeah...alright so I'm gonna call dispatch right now. um after I talk to dispatch do I call these numbers? ... okay...

16:30:24
CAM-1 yeah yeah yeah alright...call and talk what?

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

16:29:34
TWR Blue Streak four ninety five Charleston Tower. uh you got time for a question?

16:29:48
TWR Blue Streak four ninety five Charleston.

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:30:50

CAM-1 yeah...okay...what do I do after I— so I'm gonna call dispatch and tell them that we're stuck obviously okay then I'm gonna call these numbers and talk to ALPA. and then uh what do I do? then do I talk to like scheduling to see what the hell er I'm just gonna get a phone call from @ I'm sure.

16:31:24

CAM-5 sir just just be aware we had smoke coming out of your right wing. so that's why that's why we deplaned the plane so I might come jerk your # out of here. okay?

16:31:32

CAM-1 okay...okay. alright thanks.

16:31:40

CAM-1 yeah okay.

16:31:48

CAM-1 okay...alright well I'll make some phone calls. thanks...okay...alright bye.

16:32:02

CAM-1 okay well I mean so you— so definitely admit to going down the runway seeing that we're at eight and moving it to twenty and then moving it...I mean...okay alright alright.

16:32:42

CAM-1 yeah alright okay thanks alright bye.

16:33:09

CAM-1 hey @ it's Tom @ twenty four ninety five. hey yeah just trying to keep you guys in the loop.yeah we uh had an over— we had an overrun we're in the uh runoff area off the runway or whatever so we're stuck in that...yeah. so yeah yeah yeah. yeah. so we're stuck here obviously and I guess I got a bunch more phone calls to make so but yeah we are stuck here...okay...sure.

16:33:57

CAM-1 * Tom @. uh...yeah and we are in the runoff area at the end of two three...um well we got a— what's it called uh config warnings and stuff and um we just aborted um but everybody's fine onboard. they're actually deplaning. nobody's injured um—.

AIR-GROUND COMMUNICATION**TIME and
SOURCE****CONTENT**

INTRA-AIRCRAFT COMMUNICATION

AIR-GROUND COMMUNICATION

**TIME and
SOURCE**

CONTENT

16:34:38

CAM-3 the firemen want us out.

16:34:39

CAM-1 alright. I don't know. hold on a second please. they want us out from the plane right now um...is there anything else you need to know real quick before uh—.

16:34:55

CAM-2 you want to shut it down Tom?

16:34:59

CAM-1 uh no we're— we're stuck in here. I don't what this material is whatever. I think we're stuck...um...I can call you back in a— in a bit here or whatever if that's all right with you.

16:35:22

CAM-2 yes ma'am this is first officer @ with uh P-S-A Airlines...

16:35:25

CAM-1 I'll get it. I'll get it. I'll get it.

16:35:27

CAM-2 ...and uh P-S-A...uh-huh...Robert.

16:35:35

HOT [sound of chime]

16:35:46

CAM-2 yes ma'am...I'm sorry.

16:35:47

CAM-5 captain?

16:35:47

CAM-1 yeah?

16:35:48

CAM-5 I-E-C's asking me is there any possibility ** shut down completely.

16:35:52

CAM-1 that's what I'm doing right now.

**TIME and
SOURCE**

CONTENT

INTRA-AIRCRAFT COMMUNICATION**TIME and
SOURCE****CONTENT**

16:35:53

CAM-5 roger that sir.

16:35:53

CAM-2 **.

16:35:55

CAM-2 @ [phone number] **

16:36:00

CAM-1 ** securing **.

16:36:05

CAM-1 chocks brakes thrust reversers. standby attitude emergency lights. cargo fan packs bleeds. hydraulic quantity hydraulic pump...A-P-U generators off.

16:36:06

CAM-2 I'm on my cell phone...okay uh we just went off the end of the runway in Charleston, West Virginia.

16:36:22

CAM-1 oh wait a minute.

16:36:29

CAM-1 four D seven. where's four D seven?

16:36:34

CAM-1 * down there.

16:36:40

**END OF TRANSCRIPT
END OF RECORDING****AIR-GROUND COMMUNICATION****TIME and
SOURCE****CONTENT**